

Amendment dated December 19, 2006

Reply to Office Action of September 19, 2006

**REMARKS**

Upon entry of the present amendment, claims 1-7 will remain pending in the above-identified application and stand ready for further action on the merits.

**Claim Rejections – 35 USC § 103(a)**

Claims 1, 4 and 5 have been rejected under the provisions of 35 USC § 103(a) as being unpatentable over **Rodgers et al. US '737** (US 6,362,737).

Claims 2 and 3 have been rejected under the provisions of 35 USC § 103(a) as being unpatentable over **Rodgers et al. US '737** in view of **Smithgall US '027** (US 6,027,027).

Claims 6 and 7 have been rejected under the provisions of 35 USC § 103(a) as being unpatentable over **Rodgers et al. US '737** in view of **Sanders US '523** (US 6,276,523).

Reconsideration and withdraw of each of the above rejections is respectfully requested based on the following considerations.

**Legal Standard for Determining Prima Facie Obviousness**

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

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The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vuleck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the

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nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

*The Instantly Claimed Invention*

As described in the specification at page 4, lines 6-8 of the instant specification:

*Another object of the present invention is to provide an accessed object having an IC module with higher operation reliability.*

The nature of the operation reliability is also explained in the instant specification's description at page 2, lines 16-23 as follows:

*However, when, for some reason, access is made to one side of the IC module 101 as by the apparatus-side antenna 105b, the coupling efficiency is low between the module-side antenna 104 on the IC module 101 and the apparatus-side antenna 105b in conjunction with magnetic flux distribution, with the result that trouble occurs in reading or writing information, reducing operational reliability.*

According to the invention (i.e. see independent claim 1), there is provided an accessed object comprising a non-contact IC module including *an IC chip* and a radio communication antenna coil connected to said semiconductor device, wherein said radio communication antenna coil is a continuous conductive wiring pattern bent to extend over two surfaces of different directions of said accessed object, and *wherein said IC chip is inside the radio communication antenna coil.* (emphasis added)

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The accessed object of the present invention can provide a first effect that the radio communication antenna coil secures an antenna effective area (*see page 6, line 1 of the specification*) and a second effect of flexibility of the accessed object having the IC chip in better safe position. In this respect, the specification discloses at page 11, lines 2-12 as follows:

*Being flexible, the sheet 2 can be bent easily to match the shape of an accessed object, to which the sheet is attached. In this embodiment, as shown in FIGS. 4 and 6, to attach the IC module to the inside wall of the cartridge case of a tape cartridge, the IC module is bent substantially at a right angle along the line X-X of FIG. 4 with the antenna 3 and IC chip 4 located at the inner side. As shown in FIG. 6, the IC chip 4 is located in a position away from the bent portion 5 (on the line X-X in FIG. 4) of the sheet 2.*

On the other hand, any of the cited references (*i.e.*, Rodgers US '737; Smithgall US '027 and Sanders US '523), fail to teach or provide for the above-recited structure of the instant invention (and provide no motivation to arrive at the same). This is shown and explained in more detail below.

Distinctions Over the Cited Art

1) Rogers et al. US 6,362,737

In support of the rejection over Rogers et al., the USPTO asserts as follows at page 3, first paragraph of the outstanding office action:

*Although, Rogers fails to teach that the IC chip is inside antenna coil. However, it would have been an obvious design variation well within the ordinary skill in the art failing to provide any unexpected results for locating of the IC*

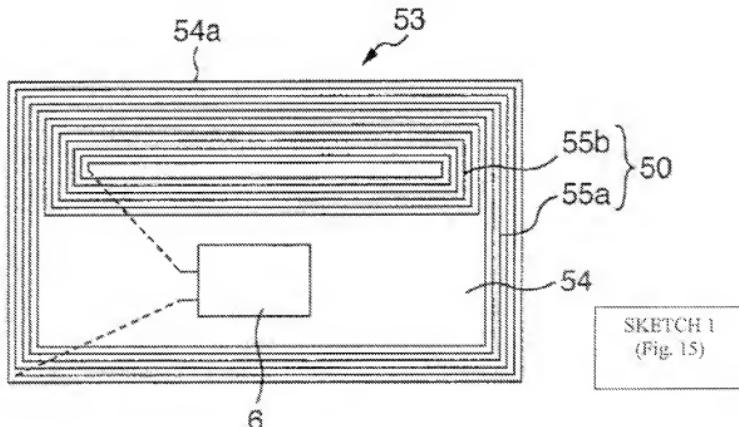
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chip, that is, it does not provide any citation by locating IC chip in particular location respect to the antenna coil (see page 3, lines 1-5 of his letter).

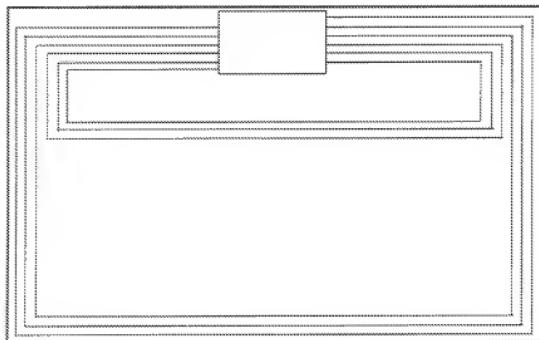
In response to this statement, the Examiner's attention is directed to the following Sketches 1-3., which are used to help explain and show that the location of the IC chip is an important matter which is not an obvious design variation and is not obvious to one of ordinary skill in the art.

The following SKETCH 1 corresponds to Fig. 15 of the present Application, while the following SKETCHES 2 and 3 have been drafted to indicate examples in which the IC chip is not inside the antenna coil in accordance with the Examiner's above comments. SKETCH 2 shows an exemplary structure of the IC chip overlapping the antenna and SKETCH 3 shows another exemplary structure of the IC chip is outside the antenna.

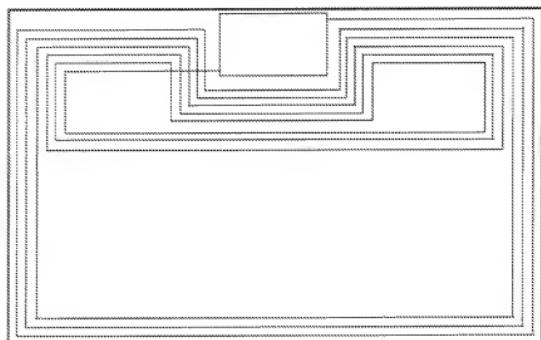


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**SKETCH 2**



**SKETCH 3**

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Under the structure of SKETCH 2, electromagnetic wave communicated by the antenna will interfere the circuit operation made in the IC chip, causing **noise and an error**, which also means that the electromagnetic wave made by the circuit operation in the IC chip will cause a spurious electromagnetic wave that will arrive at the antenna. A shield metal inserted between the antenna and the IC chip will make the **apparatus thicker**.

Next, under the structure of SKETCH 3, having a portion of the antenna making a detour around the IC chip, namely the small module side antenna portion, will make the effective antenna area for catching electromagnetic wave smaller, causing **less sensitivity of the antenna**. One of the objects of the present invention is to provide effective antenna area as explained in the descriptions of the Specification.

Then, the present invention recited in independent claim 1 will provide a thinner accessed object having less noise or error, and more sensitive antenna.

The wherein clause of claim 1 that said IC chip is inside the radio communication antenna coil means that the IC chip is not overlapping or outside the antenna coil.

Apart from the above considerations, Applicants wish to reiterate the following remarks from their previous reply of August 23, 2006, which continue to evidence the non-obviousness of the instantly claimed invention over the cited Rogers et al. US '737 reference (as well as the secondary references of Smithgall US '027 and Sanders US '523).

Rogers et al. US '737 teaches a capacitor serving as a semiconductor, however, it fails to teach an accessed object comprising a non-contact IC module including an IC chip and a radio communication antenna coil connected to said semiconductor device, wherein said radio

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communication antenna coil is a continuous conductive wiring pattern bent to extend over two surfaces of different directions of said accessed object, and wherein said IC chip is inside the radio communication antenna coil.

Referring to Figure 37 of the Rodgers et al. US '737 disclosure, there is disclosed two coils each connected to a capacitor and bent to different directions, transmitting signals of different frequencies (see the description set forth at column 55, lines 9-48 of the cited US '737 patent).

Figure 37 and column 55, lines 9-48 of US '737 of Rodgers et al. are set forth immediately below for the Examiner's convenience.

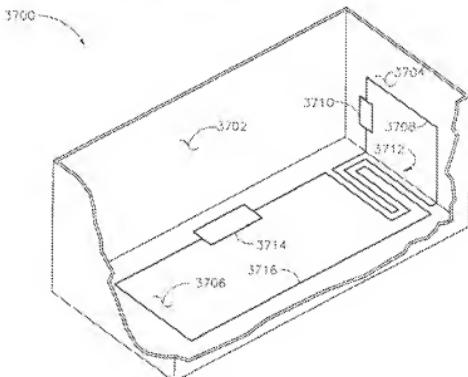


FIG. 37

When objects 102 through 112 are to be interrogated while passing through a passage of the type described or discussed above with reference to FIG. 35, interrogation and data communication reliability may be enhanced by arranging objects 102 through 112 in one or more transportation carriers. A transportation carrier, according to various aspects of the present invention, includes one or

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more resonant antenna circuits for focusing transmitted and received energy. Carrier 3700 of FIG. 37 is exemplary of any structure in which objects of the type described above may be located for convenient interrogation and data communication. A carrier having any geometry may be used for extending or shaping the antenna sensitivity pattern of the antenna of an object, for example, antenna 202 of object 104 or FIG. 2. For example, transportation carrier 3700 includes side walls 3702 and 3704, and base 3706. In addition, carrier 3700 includes antenna circuit 3708 comprising a loop conductor and series capacitor C3710. Antenna circuit 3708, by virtue of the value of capacitor C3710, has a resonant frequency selected to enhance energy transferred to an object and/or communication between monitor 124 and an object. In a preferred configuration, antenna circuit 3708 is arranged with a relatively low Q and at a resonant frequency substantially different from frequencies which may be used for interrogation and data communication. When monitor 124 provides a scan signal or subscan signal of the type discussed with reference to FIG. 4, the ring signal associated with antenna circuit 3708 may be easily identified as discussed above so that interrogation at the resonant frequency of antenna 3708 may be avoided.

Carrier 3700 may include a second antenna circuit 3716 constructed in a manner similar to antenna circuit 3708 with a series capacitance C3714. Antenna circuits 3708 and 3716 may be coupled in any convenient manner (e.g., interdigitated loops, overlapping portions) arranging a portion of each loop in close proximity for magnetic field or electric field coupling.

Memory, as discussed above, may include any apparatus for data storage (e.g., semiconductor circuits, circuits of discrete components, and magnetic and/or optical media.

## 2) Sanders US 6,276,523

Figures 1a and 1b of Sanders US '523 disclose an opaque plastic material for holding information recording medium such as a compact disc (see the description set forth at column 10, lines 25-38 of the cited US '523 patent).

For the Examiner's convenience, description set forth at column 10, lines 25-38 (and Figs. 1a and 1b) and of the cited US '523 patent are set forth below:

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Although the present invention has been described with respect to a number of preferred embodiments, it is anticipated that those skilled in the art will become aware of alternative embodiments not described here that fall within the scope of the invention. Although the basic material utilized for constructing the present invention is preferably a clear, plastic, pliable material, alternative non-clear, and in some instances non-plastic sheets, might be utilized under certain conditions. It is possible, for example, that instead of having printed paper material to be inserted into the container, the container panels themselves could be constructed of opaque plastic material that may be directly printed on. Colored, transparent, or semi-transparent panels are also anticipated by the present invention.

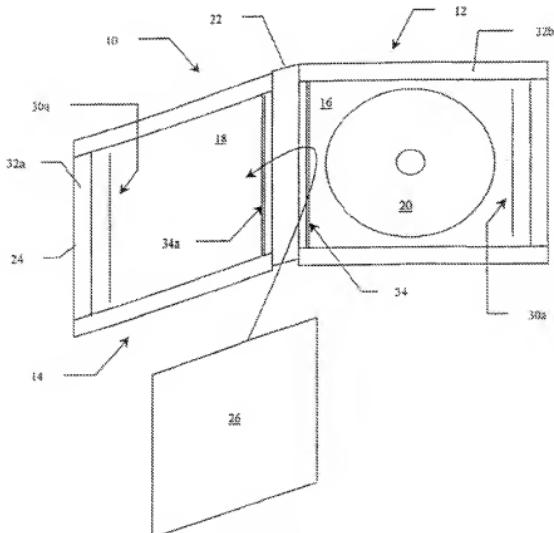


FIG. 1a

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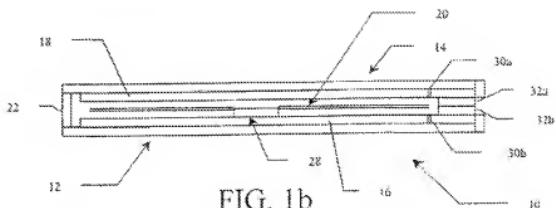


FIG. 1b

3) Smithgall US 6,027,027

Figure 4 of Smithgall US '027 shows a low cost radio frequency identification RFID tag comprising an antenna and an integrated circuit wherein the antenna and the integrated circuit are attached to a paper substrate (see description at column 1, lines 65-67 of the cited US '027 patent). Figure 4 and column 1, lines 65-67 of US '027 of Smithgall are set forth immediately below for the Examiner's convenience.

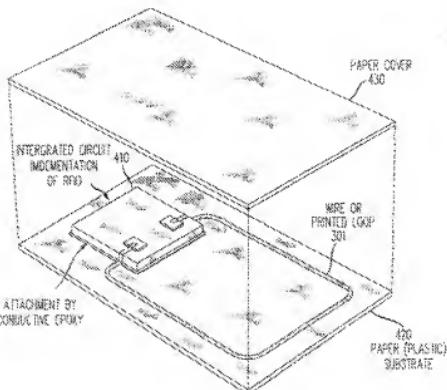


FIG. 4

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*In accordance with the invention, a low cost radio frequency identification tag is provided for attaching to and identifying objects such as, for example, a passenger's luggage.*

Accordingly, a proper consideration of each of the above disclosures of the cited/applied art of record (Rogers et al. US '737, Sanders US '523 and Smithgall US '027) shows that each of the cited art references completely fails to teach or provide for, or otherwise obtain, the object and structure of the instant invention being claimed (e.g., *see instant independent claim 1*).

Likewise, since claim 1 is the sole independent claim in the instant application, it also follows that the cited art references of record completely fail to teach or provide for the invention as recited in any of instantly pending dependent claims 2-7.

Accordingly, it is submitted that the cited art of record, whether such cited art is considered singularly or in combination, completely fails to provide any motivation to arrive at the instant invention as claimed. Absent such motivation in the cited art that would allow one of ordinary skill in the art to arrive at the invention being claimed, it also follows that each of pending claims 1-7 is non-obvious over the cited art of record. Any contentions of the USPTO to the contrary must be reconsidered.

***Provisional Request for Interview***

Should the present reply not result in an allowance of each of pending claims 1-7 the Examiner is respectfully requested to contact the undersigned so that an interview may be held at

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the Examiner's earliest convenience, in order to help expedite further prosecution of the claims towards allowance.

**CONCLUSION**

Based on the remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance, clearly indicating that each of instantly pending claims 1-7 is allowed and patentable under the provisions of title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: December 19, 2006

Respectfully submitted,

By 

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